



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/804,263

03/19/2004

Harri Pekonen

004770.00167

7432

22907

7590

02/04/2009

BANNER & WITCOFF, LTD.

1100 13th STREET, N.W.

SUITE 1200

WASHINGTON, DC 20005-4051

EXAMINER

MANOHARAN, MUTHUSWAMY GANAPATHY

ART UNIT

PAPER NUMBER

2617

MAIL DATE

DELIVERY MODE

02/04/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/804,263

Applicant(s)

PEKONEN ET AL.

ExaminerMUTHUSWAMY G.
MANOHARAN**Art Unit**

2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 November 2008.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-27 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 3, 4, 6, 15, 17, 20 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chuah et al. (hereinafter Chuah) (US 7065359) in view of Leung (US 2007/0002798).

Regarding claim 1, Chuah teaches a method comprising:

(A) receiving a first channel burst from a first base station on a wireless channel, wherein the first base station serves the first cell and wherein the first channel burst supports a data service (Col. 5, lines 8-10);

(B) determining whether a serving signal quality associated with the first cell satisfies a handover criterion (Col. 5, lines 11-18);

(C) in response to (B), obtaining measurements associated with a list of candidate cells, wherein the list comprises at least one candidate cell and wherein each measurement gauges a corresponding signal quality that is provided by a corresponding candidate cell (Col. 5, lines 19-23; "performs RF measurements and selects based on such measurements which BTS the AT 14 is to receive downlink data from", Col. 2, lines 60-63);

(D) if a selected signal quality is acceptable, deciding to perform the handover to a selected candidate cell, wherein the selected candidate cell is a member of the list and wherein the selected signal quality corresponds to the selected candidate cell (Col. 5, lines 24-35);

(E) after performing (D), receiving a final channel burst from the first base station (Col. 6, lines 1-2); and

(F) in response to (E), performing the handover to the selected candidate cell and receiving a new channel burst from a selected candidate base station such that the handover occurs between the final channel burst and the new channel burst, wherein the selected candidate base station is serving the selected candidate cell (Col. 6, lines 5-17; Abstract; Note: Chuah teaches **TDMA system, col. 1, line 30**).

Chuah did not teach specifically receiving a first channel broadcasted from a unidirectional broadcast network. However, Leung teaches in an analogous art receiving a first channel broadcasted from a unidirectional broadcast network (Abstract;

Figure 6, Paragraph [0068]). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to use the method of receiving a first channel broadcasted from a unidirectional broadcast network in order to reduce the signaling load and also use the method applicable to broadcasting communication system.

Regarding **claim 3**, Chuah teaches the method of claim 1, wherein the serving signal quality is determined from the first channel burst (Col. 5, lines 19-23).

Regarding **claim 4**, Chuah teaches, wherein the serving signal quality is selected from a group of indicators consisting of a received signal strength indicator (RSSI) value, a bit error rate (BER), a packet error rate (PER), and a frame error rate (FER) (Col. 5, lines 12-18).

Regarding **claim 6**, Chuah teaches, the method of claim 1, further comprising: (G) determining the list of candidate cells (Col. 6, lines 37-44).

Claims 15 and 20 are rejected for the same reason as set forth in claim 1.

Regarding **claim 17**, Chuah further teaches the method of claim 1 further comprising serving a digital broadband broadcasting area and the data service is associated with a digital broadband broadcasting service (Col. 2, lines 1-20; Further this limitation is well known as admitted by the applicant (Paragraph [0002]).

Claim 25 is rejected for the same reason as set forth in claim 1.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chuah et al. (hereinafter Chuah) (US 7065359) in view of Leung (US 2007/0002798) as applied in claims above, and further in view of Park et al. (hereinafter Park) (US 6154652).

Regarding **claim 2**, the combinations of Chuah and Leung teaches all the particulars of claim, except the method, wherein (C) comprises: (i) obtaining the measurements cannot be completed before receiving the final channel burst from the first base station, suspending obtaining the measurements; (ii) receiving another channel burst from the first base station; and (iii) in response to (ii), resuming obtaining the measurements. However, Park teaches in an analogous art, wherein (C) comprises: (i) if obtaining the measurements cannot be completed before receiving the final channel burst from the first base station, suspending obtaining the measurements; (ii) receiving another channel burst from the first base station; and (iii) in response to (ii), resuming obtaining the measurements (Figure 2; Col. 5, lines 39-45; Col. 2, lines 19-67). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to have the method wherein (C) comprises: (i) if obtaining the measurements cannot be completed before receiving the final channel burst from the first base station, suspending obtaining the measurements; (ii) receiving another channel burst from the first base station; and (iii) in response to (ii), resuming obtaining the measurements. This modification helps in improving the reliability of the handover process

Claims 5, 19 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chuah et al. (hereinafter Chuah) (US 7065359) in view of Leung

(US 2007/0002798) as applied in claims above, and further in view of Jonsson (US 5513246).

Regarding **claims 5 and 21**, the combinations of Chuah and Leung teaches all the particulars of the claim except, the method wherein (D) comprises: (i) adjusting the selected signal quality by a hysteresis value. However, Jonsson teaches in an analogous art, the method wherein (D) comprises: (i) adjusting the selected signal quality by a hysteresis value (Col. 11, lines 20-26). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to have the method wherein (D) comprises: (i) adjusting the selected signal quality by a hysteresis value. This modification improves the network operating performance.

Regarding **claim 19**, Chuah teaches all the particulars of the claim except the method further comprising: (G) in response to (E), determining that the serving signal quality is not indicative of a handover; and (H) in response to (G), canceling the handover to the selected candidate cell. However, Jonsson teaches in an analogous art, the method further comprising: (G) in response to (E), determining that the serving signal quality is not indicative of a handover; and (H) in response to (G), canceling the handover to the selected candidate cell. Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to use the method further comprising: (G) in response to (E), determining that the serving signal quality is not indicative of a handover; and (H) in response to (G), canceling the handover to the selected candidate cell. This modification improves the reliability of the communications.

Claims 7-9, 12-13 and 22,24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chuah et al. (hereinafter Chuah) (US 7065359) in view of Leung (US 2007/0002798) as applied in claims above, and further in view of Chen et al. (hereinafter Chen) (US 6731936).

Regarding **claim 7**, the combination of Chuah and Leung teaches all the particulars of the claim except, wherein (G) comprises: (i) receiving handover information from the first base station, wherein the handover information comprises candidate information indicative of the list of candidate cells. However, Chen teaches in an analogous art, wherein (G) comprises: (i) receiving handover information from the first base station, wherein the handover information comprises candidate information indicative of the list of candidate cells (Col. 3, lines 12-18). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to use the method wherein (G) comprises: (i) receiving handover information from the first base station, wherein the handover information comprises candidate information indicative of the list of candidate cells. This list helps in speeding up the handover process.

Regarding **claims 8 and 22**, the combination of Chuah and Leung teaches all the particulars of the claim except the method, further comprising: (G) determining a phase shift offset that is associated with the selected candidate cell. However, Chen teaches in an analogous art, the method, further comprising: (G) determining a phase shift offset that is associated with the selected candidate cell (Col. 3, lines 3-6). Therefore, it

would be obvious to one of ordinary skill in the art at the time of invention to use the method, further comprising: (G) determining a phase shift offset that is associated with the selected candidate cell. This modification helps in synchronization of the signal and thus speeding up the handover process.

Regarding **claim 9**, the combination of Chuah and Leung teaches all the particulars of the claim except the method wherein (G) comprises: (i) receiving handover information from the first base station, wherein the handover information comprises the phase shift offset that is associated with the selected candidate cell. However, Chen teaches in an analogous art, the method, wherein (G) comprises: (i) receiving handover information from the first base station, wherein the handover information comprises the phase shift offset that is associated with the selected candidate cell (Col. 3, lines 3-6). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to use the method, wherein (G) comprises: (i) receiving handover information from the first base station, wherein the handover information comprises the phase shift offset that is associated with the selected candidate cell. This modification helps in synchronization of the signal and thus speeding up the handover process.

Regarding **claim 12 and 24**, the combination Chuah and Leung teaches all the particulars of the claim except the method further comprising: (G) if a candidate signal quality is not acceptable, removing the associated candidate from the list of candidate

cells. However, Chen teaches in an analogous art, (G) if a candidate signal quality is not acceptable, removing the associated candidate from the list of candidate cells (Col. 3, lines 54-67). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to have the method wherein, (G) if a candidate signal quality is not acceptable, removing the associated candidate from the list of candidate cells. This modification helps to speed up the hand over process, since the mobile station does not have to check those base stations with insufficient signal strength.

Regarding **claim 13**, the combination Chuah and Leung teaches all the particulars of the claim except the method wherein (F) comprises: (i) receiving the new channel burst associated with a different frequency. However, Chen teaches in an analogous art, the method wherein (F) comprises: (i) receiving the new channel burst associated with a different frequency (Col. 15, lines 10-25). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to have the method wherein (F) comprises: (i) receiving the new channel burst associated with a different frequency. This modification avoids making the system so rigid by restricting to one particular frequency.

Claims 10,11,16,18,23 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chuah et al. (hereinafter Chuah) (US 7065359) in view of Leung (US 2007/0002798) as applied in claims above, and further in view of Nishiyama et al. (hereinafter Nishiyama) (US 2003/0162535)

Regarding **claim 10**, the combination of Chuah and Leung teaches all the particulars of the claim except the method, further comprising: (H) in response to (E), suspending reception on the wireless channel until performing (F). However, Nishiyama teaches in an analogous art the method, further comprising: (H) in response to (E), suspending reception on the wireless channel until performing (F) (Paragraph [0075], lines 6-12). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to use the method, further comprising: (H) in response to (E), suspending reception on the wireless channel until performing (F) to reduce the power consumption of the mobile station.

Regarding **claims 11, and 23**, the combination of Chuah and Leung teaches all the particulars of the claim except the method, further comprising: (i) instructing module of a wireless terminal to reduce power consumption. However, Nishiyama teaches in an analogous art the method, wherein (H) comprises: (i) instructing module of a wireless terminal to reduce power consumption (Abstract, mobile terminal carries out adjacent cell search under low power consumption). Therefore, it would be obvious to one of ordinary skill in the art to use the method, wherein (H) comprises: (i) instructing module of a wireless terminal to reduce power consumption to save battery power.

Claim 16 is rejected for the same reason as set forth in claim 10.

Regarding **claim 18**, the combination of Chuah and Leung teaches all the particulars of the claim except the method, wherein a phase shift offset associated with the selected base station is not provided by the wireless system. However, Nishiyama

teaches in an analogous art the method, wherein a phase shift offset associated with the selected base station is not provided by a same wireless system (table 1, Paragraph [0076]; the base station AP1 broadcasts the information related to the adjacent cells, Paragraph [0082]). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to use the, wherein a phase shift offset associated with the selected base station is not provided by the wireless system and thus enable the mobile station to determine the phase shift offset in advance.

Claim 26 is rejected for the same reason as set forth in claim 11.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chuah et al. (hereinafter Chuah) (US 7065359) in view of Leung (US 2007/0002798) as applied in claims above, and further in view of Bolgiano et al. (hereinafter Bolgiano) (US 6366568).

Regarding **claim 14**, the combination of Chuah and Leung teaches all the particulars of the claim except the method, wherein (F) comprises: (i) receiving the new channel burst associated with a different channelization code. However, Bolgiano teaches in an analogous art, the method, wherein (F) comprises: (i) receiving the new channel burst associated with a different channelization code (Col. 13, lines 17-25; Col. 15, lines 7-16). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to have the method, wherein (F) comprises: (i) receiving the new channel burst associated with a different channelization code. This modification avoids making the system so rigid by restricting on particular channelization code.

Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chuah et al. (hereinafter Chuah) (US 7065359) in view of Leung (US 2007/0002798) and Jonsson (US 5513246) and further in view of Chen et al. (hereinafter Chen) (US 6731936).

Regarding claim 27, the combinations of Chuah and Leung teaches a method for a wireless terminal performing a handover (title) from a first cell to another cell in a wireless system, comprising (Abstract):

(A) receiving a first channel burst from a first base station on a wireless channel, wherein the first base station serves the first cell and wherein the first channel burst supports a multicast service (Col. 5, lines 8-10);

(B), determining a list of candidate cells, wherein the list comprises at least one candidate cell (Col. 5, lines 19-23);

(C) determining whether a serving signal quality associated with the first cell satisfies a handover criterion (Col. 5, lines 11-18);

(D) obtaining measurements associated with a list of candidate cells, wherein the list comprises at least one candidate cell and wherein each measurement gauges a corresponding signal quality that is provided by a corresponding candidate cell (Col. 5, lines 19-23);

(G) if a selected signal quality is acceptable, deciding to perform the handover to a selected candidate cell, wherein the selected candidate cell is a member of the list and wherein the selected signal quality corresponds to the selected candidate cell (Col. 5, lines 24-40);

(H) after performing (G), receiving a final channel burst from the first base station (Col. 6, lines 1-2); and

(I) in response to (H), performing the handover to the selected candidate cell and receiving a new channel burst from a selected candidate base station such that the handover occurs between the final channel burst and the new channel burst, wherein the selected candidate base station is serving the selected candidate cell (Col. 6, lines 5-17) and wherein the new channel burst supports the multicast service (This method could be applicable to multicast service also; this limitation is adding additional use for the method rather than limiting the application to multicast).

Chuah did not teach specifically receiving a first channel broadcasted from a unidirectional broadcast network. However, Leung teaches in an analogous art receiving a first channel broadcasted from a unidirectional broadcast network (Abstract; Figure 6, Paragraph [0068]). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to use the method of receiving a first channel broadcasted from a unidirectional broadcast network in order to reduce the signaling load and also use the method applicable to broadcasting communication system.

The combination of Chuah and Leung did not teach specifically, the method of (i) adjusting the selected signal quality by a hysteresis value. However, Jonsson teaches in an analogous art, the method comprises: (i) adjusting the selected signal quality by a hysteresis value (Col. 11, lines 20-26). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to have the method comprises: (i)

adjusting the selected signal quality by a hysteresis value. This modification improves the network operating performance.

The combination of Chuah, Leung and Jonsson teaches the method further comprising: if a candidate signal quality is not acceptable, removing the associated candidate from the list of candidate cells. However, Chen teaches in an analogous art, a method comprising: if a candidate signal quality is not acceptable, removing the associated candidate from the list of candidate cells (Col. 3, lines 54-67). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to have the method comprising: if a candidate signal quality is not acceptable, removing the associated candidate from the list of candidate cells. This modification helps to speed up the hand over process, since the mobile station does not have to check those base stations with insufficient signal strength.

Response to Arguments

Applicant's arguments filed 11/11/2008 have been fully considered but they are not persuasive.

Applicant argues that Chuah could not be modified to operate in a unidirectional broadcast network, and hence the combination of Chuah and Leung fails to teach or suggest "receiving a first channel burst broadcasted from a first base station of a unidirectional broadcast network on a wireless channel," as recited in amended claim 1.

However, Chuah in view of Leung does not require the wireless unit sends an indication to the wireless communication system of the identity of the selected base station in order to receive the information through the second base station.

Leung teaches broadcast system where the information is being sent through both the first and second base station. Only the timing alignment needs to be set as taught by Leung (Paragraphs [0062-0066]).

With the modifications by Leung to handle unidirectional broadcast network, the combination of Chua and Leung teaches (Abstract; Figure 6, Paragraph [0068]), "receiving a first channel burst broadcasted from a first base station of a unidirectional broadcast network on a wireless channel," as recited in amended claim 1.

Applicant argues that," Leung indicates that its system would not be combined with subscriber assisted handoffs systems, such as that disclosed in Chuah, due to synchronization issues and a high signaling load. Therefore, the combination of Chuah and Leung is improper for the above noted reasons described in Leung".

As pointed out above, Chuah in view of Leung does not require the wireless unit sends an indication to the wireless communication system of the identity of the selected base station in order to receive the information through the second base station.

Leung teaches broadcast system where the information is being sent through both the first and second base station. Only the synchronization issues needs to be fixed as taught by Leung (Paragraphs [0062-0066]).

Therefore, the combination of Chuah and Leung is proper for the above noted reasons.

Applicant's argument regarding claims 11 and 23 are related to the newly amended claim. Applicant is therefore, requested to refer the above office action for further explanation.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MUTHUSWAMY G. MANOHARAN whose telephone number is (571)272-5515. The examiner can normally be reached on 7:00AM-2:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eng George can be reached on 571-272-7495. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/George Eng/
Supervisory Patent Examiner, Art Unit 2617